

SENSITRON SEMICONDUCTOR

1N5415/US thru 1N5420/US

**3A FAST RECOVERY
RECTIFIERS**

TECHNICAL DATA
DATA SHEET 125, REV E

AVAILABLE AS
1N, JAN, JANTX, JANTXV
JANS
JAN EQUIVALENT*
SJ*, SX*, SV*, SS*

Fast Recovery Rectifiers

Qualified per MIL-PRF-19500/411

DESCRIPTION:

This voidless hermetically sealed fast recovery rectifier diode series is military qualified per MIL-PRF-19500/411 and is targeted for space, commercial and military aircraft, military vehicles, shipboard markets and all high reliability applications.

FEATURES / BENEFITS:

- ✓ Hermetic, non-cavity glass package
- ✓ Category I Metallurgically bonded
- ✓ All parts are 100% hot solder dipped
- ✓ JAN/ JANTX/ JANTXV available per MIL-PRF-19500/411
- ✓ "JANS Plus" removes atypical/out of family V_F

ELECTRICAL CHARACTERISTICS

MAX. RATINGS / ELECTRICAL CHARACTERISTICS All ratings are at $T_A = 25^\circ\text{C}$ unless otherwise specified.

RATING	CONDITIONS	MIN	TYP	MAX	UNIT
Peak Inverse Voltage (PIV) 1N5415,US 1N5416,US 1N5417,US 1N5418,US 1N5419,US 1N5420,US	-	-	-	50 100 200 400 500 600	Vdc
Average DC Output Current (I_o)	$T_A = +55^\circ\text{C}$	-	-	3.0	Amps
Peak Single Cycle Surge Current (I_{fsm})	$t_p = 8.3$ ms Single Half Cycle Sine Wave, Superimposed On Rated Load	-	-	80	Amps(pk)
Operating and Storage Temp. (T_{op} & T_{stg})	-	-65	-	+175	$^\circ\text{C}$
Maximum Forward Voltage (V_f)	$I_f = 9.0\text{A}$ (300 μsec pulse, duty cycle < 2%) $I_f = 1.5\text{A}$	0.6 0.5	-	1.5 1.2	Volts
Maximum Instantaneous Reverse Current At Rated (PIV)	$T_A = 25^\circ\text{C}$ $T_A = 100^\circ\text{C}$	-	-	1.0 20	μAmps

SENSITRON SEMICONDUCTOR

1N5415/US thru 1N5420/US

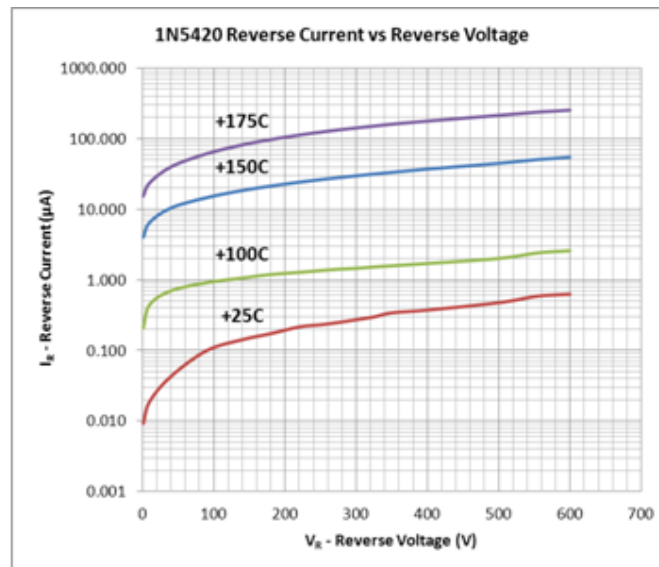
**3A FAST RECOVERY
RECTIFIERS**

TECHNICAL DATA
DATA SHEET 125, REV E

RATING	CONDITIONS	MIN	TYP	MAX	UNIT
Reverse Recovery Time (t_{rr}) 1N5415/US, 1N5416,US 1N5417,US, 1N5418,US 1N5419/US, 1N5420,US	$I_f = 0.5A, I_r = 1.0A, I_{rr} = 0.25A$	-	-	150 150 250 400	nsec
Thermal Resistance (θ_{JL})	$d = 0.375''$	-	-	22	$^{\circ}C/W$
Thermal Resistance (θ_{JC})	$L=0$ for US versions	-	-	6.5	$^{\circ}C/W$

*Sensitron **space equivalent diodes** are manufactured and screened to MIL-PRF-19500 flow and guidelines starting from wafer fabrication through assembly and testing using our internal specification.

GRAPHS:

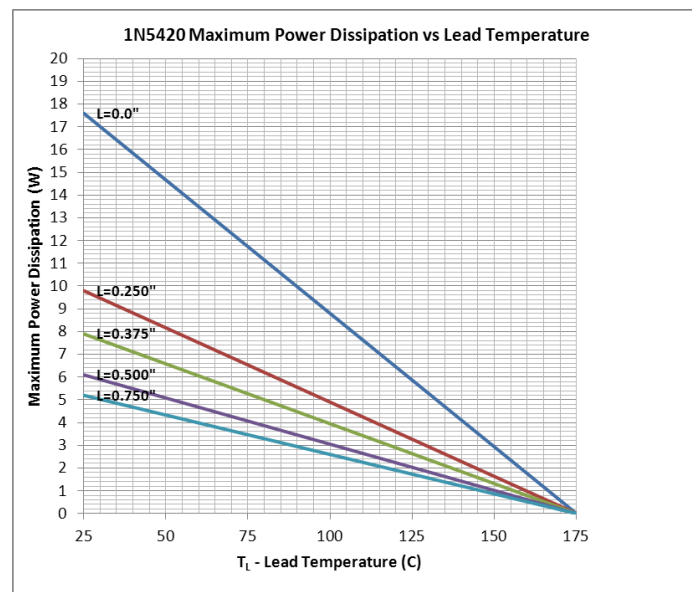
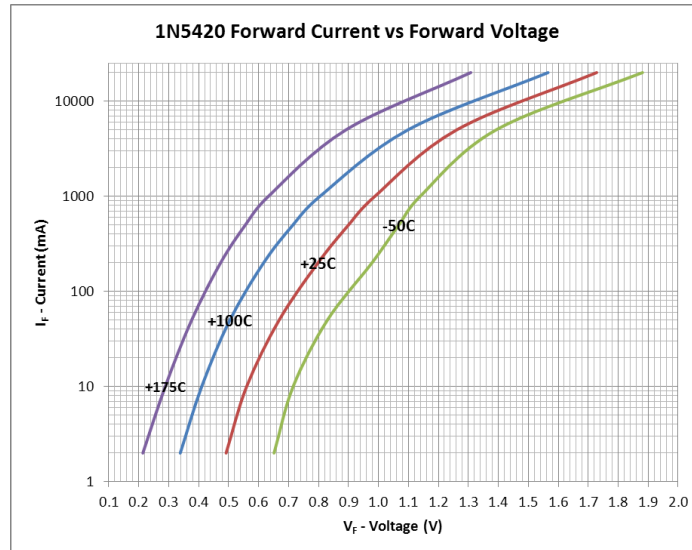


SENSITRON SEMICONDUCTOR

1N5415/US thru 1N5420/US

3A FAST RECOVERY
RECTIFIERS

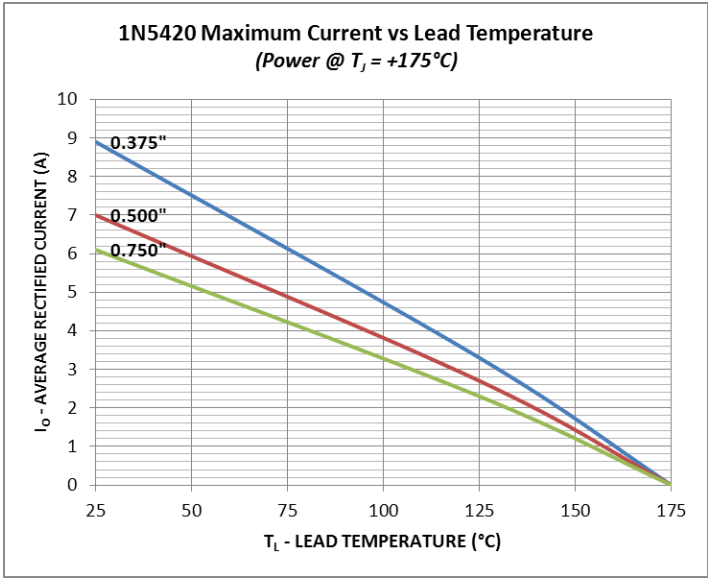
TECHNICAL DATA
DATA SHEET 125, REV E



SENSITRON SEMICONDUCTOR

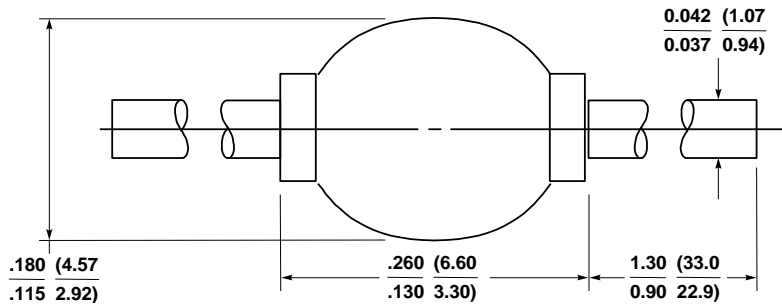
TECHNICAL DATA
DATA SHEET 125, REV E

1N5415/US thru 1N5420/US
**3A FAST RECOVERY
RECTIFIERS**

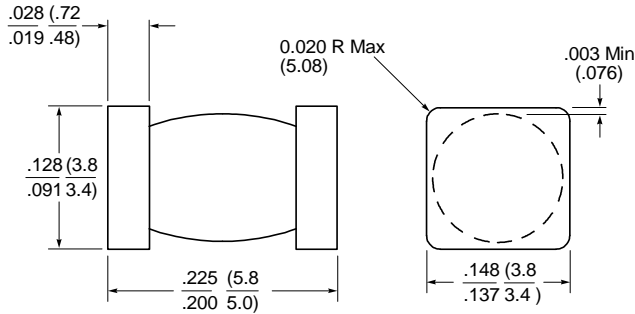


PACKAGE DIMENSIONS (inches/mm)

AXIAL (PKG 301)



MELF (Add "US" to part number)



SENSITRON SEMICONDUCTOR

1N5415/US thru 1N5420/US

**3A FAST RECOVERY
RECTIFIERS**

TECHNICAL DATA
DATA SHEET 125, REV E

PART ORDERING INFORMATION

The following part numbers can be screened and tested to the military screening flow. The parts are marked in accordance with the testing performed, example:

Sensitron Screening Level	*Part Number-- Leaded Package (example for 1N5415)	*Part Number-- Surface Mount Package (example for 1N5415US)
1N	1N5415	1N5415US
JAN	JAN1N5415	JAN1N5415US
JANTX	JANTX1N5415	JANTX1N5415US
JANTXV	JANTXV1N5415	JANTXV1N5415US
SJ	SJ5415	SJ5415US
SX	SX5415	SX5415US
SV	SV5415	SV5415US
JANS	JANS1N5415	JANS1N5415US
SS	SS5415	SS5415US

DISCLAIMER:

- 1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the Sensitron Semiconductor sales department for the latest version of the datasheet(s).
- 2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.
- 3- In no event shall Sensitron Semiconductor be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). Sensitron Semiconductor assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
- 4- In no event shall Sensitron Semiconductor be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
- 5- No license is granted by the datasheet(s) under any patents or other rights of any third party or Sensitron Semiconductor.
- 6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of Sensitron Semiconductor.
- 7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations.